REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

Initially, the Examiner's attention is drawn to the fact that Form PTO/SB/08a filed with applicant's IDS on September 22, 2005, and returned with the last office action, has not been fully initialed. In particular, there were no initials opposite the Wong reference – even though from the office action it is clear that the Examiner has substantively considered this reference.

Accordingly, the Examiner is respectfully requested to return a fully initialed copy of Form PTO/SB/08a. For the Examiner's convenience, a copy of the partially-initialed current form of this document is attached.

Although claims 1-8, 14-18 and 20 are nowhere mentioned in the outstanding office action, it is presumed that they have been "withdrawn" as non-elected in response to the earlier restriction requirement. However, in view of the fact that claims 5 and 14 appear to be patentable for reasons similar to those discussed below with respect to the elected claims (e.g., use of spatially-selective velocity-selective spin labeling), the Examiner's reconsideration is respectfully requested such that at least the presently "withdrawn" claims 5 and 14 can be commonly issued in a single U.S. patent. Other

withdrawn claims (except for parents to claims 5 and 14) have been cancelled without prejudice or disclaimer to a timely filed divisional application.

The rejection of claims 9-13 and 19 under 35 U.S.C. §103 as allegedly being made "obvious" based on Alsop '405 in view of Wong is respectfully traversed.

As will be noted, the limitations of dependent claim 10 have now been incorporated into each of the elected independent claims. Accordingly, the following discussion will be made with respect to the amended claims.

In a nutshell, the Examiner's attention is drawn to the fact that applicant's now claimed invention requires spatially-selective velocity-selective ASL spin labeling in a novel and non-obvious way. Among other things, this permits an improvement in quantitative accuracy where the ASL transit delay time, Td, becomes substantial (e.g., greater than the T1 longitudinal relaxation time constant).

The Examiner alleges that Alsop teaches spatially selecting a region outside a region to be imaged – but does not expressly teach a velocity-selective pulse, i.e., velocity encode. Wong teaches a velocity-selective pulse. Therefore, the Examiner alleges that it would have been obvious to modify Alsop by adding a velocity-selective pulse as taught by Wong.

However, it is impossible to reach the applicant's claimed invention even assuming *arguendo* that Alsop could be modified with a velocity-selective pulse as taught by Wong.

For example, Wong does not teach (or suggest) applicant's claimed feature requiring that a gradient magnetic field pulse spatially select a region so that a velocity-selective pulse is applied with spatial selectivity. Instead, Wong teaches merely applying a velocity-selective pulse with no spatial selectivity.

The presently claimed invention (i.e., using a spatially-selective/velocity-selective pulse train) yields results which are unpredictable from any possible combination of Alsop and Wong. For example, quantitative fluid imaging can be performed with high accuracy as ASL imaging (e.g., non-invasive MRI blood flow imaging). That is, error due to Td (transit delay) time (which is perhaps the biggest problem for conventional spatially-selective ASL methods) can be reduced. More specifically, applicant combines velocity selection with spatial selection. Consequently, fluid having a high velocity, such as some blood flows, can be labeled by a spatially-selective pulse, while fluid having a relatively low velocity in a region to be imaged, such as other blood flows, can be labeled by a velocity-selective pulse. This allows approximately twice the labeling sensitivity

(SNR) as that provided by conventional ASL imaging using velocity selection methods – i.e., a greater number of flowing blood nuclei get encoded for ASL MRI.

Using only one of velocity selection or spatial selection can not achieve the applicant's improvement in quantitative accuracy where Td problems occur.

The above distinguishing comments are believed to apply to each of the elected independent claims – thus making it unnecessary for now to discuss other deficiencies of the cited references with respect to other features of the rejected claims.

The Examiner's attention is also drawn to new method claims 21-25 which correspond respectively to claims 9-13 and 19 discussed above.

New claims 26-28 are also directed to a combination of spatially-selective and velocity-selective ASL labeling that is not suggested by the prior art.

Accordingly, this entire application is now believed to be in condition for allowance, and a formal notice to that effect is respectfully solicited.

Respectfully submitted,

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